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10/669,719	09/25/2003	Wataru Yamada	117322	6414

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EXAMINER

DOE, JANIS L

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 04/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/669,719	Applicant(s) YAMADA ET AL	
	Examiner Janis L. Dote	Art Unit 1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The examiner acknowledges the amendments to claims 1-3 and 5, the cancellation of claim 4, and the addition of claims 13-15, set forth in the amendment filed on Jan. 21, 2005. Claims 1-3 and 5-15 are pending.

2. The replacement sheets of the drawings were received on Jan. 21, 2005. The replacement sheets of the drawings are acceptable.

3. The rejection of claims 3 and 4 under 35 U.S.C. 112, second paragraph, set forth in the office action mailed on Sep. 21, 2004, paragraph 4, has been withdrawn in response to the amendment filed on Jan. 21, 2005, to claim 3 and the cancellation of claim 4.

The rejection of claims 1-7, 11, and 12 under 35 U.S.C. 102(e) over US 6,479,202 B2 (Shida) set forth in the office action mailed on Sep. 21, 2005, paragraph 9, has been withdrawn in response to the amendments filed on Jan. 21, 2005, to claims 1, 2, and 5, adding the limitation that the group Y in formula (1) is a divalent group "containing at least one carbon atom in its main chain." As discussed in paragraph 9, Shida teaches a siloxane resin that is obtained from a coating solution comprising phenyltrimethoxysilane,

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dimethoxydimethylsilane, compound T-1, and aluminum trisacetylacetonate. The hydrolytic methoxy groups in dimethoxydimethylsilane and in phenyltrimethoxysilane react with each other to form a siloxane resin comprising phenylsiloxane units, dimethylsiloxane units, and unreacted hydrolytic methoxy units. The resulting siloxane resin comprises units of compound -Si-O-Si- and units of -Si-O-CH₂-triphenylamine moiety of compound (T-1), which meet the compositional limitations of formula (2), recited in instant claim 1. Col. 5, compound T-1, and preparation of photoreceptor 1 at cols. 17 and 18. The units of -Si-O-Si- are outside the scope of formula (1) recited in instant claims 1, 2, and 5.

The rejection of claims 1-6, 11 and 12 under 35 U.S.C. 102(b) over Japanese Patent 2000-275886 (JP'886), as evidenced by applicants' admission at page 52, line 8, of the instant specification, identifying dibutyltin diacetate as a metal chelating compound, set forth in the office action mailed on Sep. 21, 2005, paragraph 10, has been withdrawn in response to the amendments filed on Jan. 21, 2005, to claims 1, 2, and 5, as described supra. As discussed in paragraph 10, JP'886 discloses that a siloxane resin is obtained from a coating solution comprising methyltrimethoxysilane, a polysiloxane resin comprising 1% of silanol groups, methylsiloxane units, and

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methylphenylsiloxane units, compound (T-1), and "dibutyltin acetate [sic: dibutyltin diacetate]." Translation of JP'886, paragraph 0029, compound (T-1); and example 1 in paragraphs 0116-0124. The hydrolytic methoxy units of methyltrimethoxysilane and the hydrolytic hydroxyl groups in the polysiloxane resin react with the hydroxyl group in compound (T-1) to form the linkage -Si-O-CH₂-triphenylamine moiety of compound (T-1). The resulting siloxane resin comprises units of compound -Si-O-Si- and units of -Si-O-CH₂-triphenylamine moiety of compound (T-1), which meet the compositional limitations of formula (2) recited in instant claim 1. The units of -Si-O-Si- are outside the scope of formula (1) recited in instant claims 1, 2, and 5.

4. The disclosure is objected to because of the following informalities:

The use of trademarks, e.g., Sumilizer [sic: SUMILIZER] at page 69, line 6, has been noted in this application. The trademarks should be capitalized wherever they appear and be accompanied by the generic terminology. This example is not exhaustive. Applicants should review the entire specification for compliance.

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Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Appropriate correction is required.

Applicants' arguments filed on Jan. 21, 2005, have been fully considered but they are not persuasive.

Applicants assert that the amendment filed on Jan. 21, 2005, to the specification overcomes the objection.

However, for the reasons discussed in the above objection, the amendment filed on Jan. 21, 2005, to the specification did not capitalize all the trademarks disclosed in the specification. Accordingly, the objection stands.

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

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The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Instant claim 3 recites that "at least one of Ar¹ or Ar² [of formula (4)] is bonded to R¹ in general formula (2)."

The originally filed specification does not provide an adequate written description of said limitation. The originally filed specification at page 13, lines 7-9, discloses, and originally filed claim 3 recites that "at least one of Ar¹ or Ar² [of formula (4)] has a bonding hand with R¹ in general formula (2)." The originally filed specification does not define what is meant by the phrase "a bonding hand," which is not a common term in the chemical arts. Applicants have not indicated where in the originally filed specification there is antecedent basis for the limitation recited in instant claim 3.

In the response filed on Jan. 21, 2005, applicants state that claim 3 was amended to recite "at least one of Ar¹ or Ar² is bonded to R¹ in general formula (2)" as interpreted by the Patent Office. However, the examiner's interpretation is merely used to give an interpretation of the claim so that the patentability of the claim can be tested over the prior art, in an attempt to

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expedite prosecution. The examiner's interpretation of the claim language "has a bonding hand with R¹" does not provide antecedent basis for the amendment filed on Jan 21, 2005, to claim 3, in the originally filed specification. The burden is on applicants to demonstrate antecedent basis for their claim construction as well as for the particular claim language they chose.

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 1-3 and 5-15 are rejected under 35 U.S.C. 102(e) as being anticipated by US 2004/0086794 A1 (Yamada).

Yamada discloses an electrophotographic photoreceptor comprising a conductive support, a charge generation layer, a charge transport layer, and an uppermost layer comprising a siloxane resin that meets the compositional limitations recited in instant claims 1-3, 13 and 14. Example 1 in paragraphs 0120-0124. The uppermost layer is obtained by forming a coating solution and coating the solution on the charge transport layer. The coating solution comprises compound (VI-3), compound (III-3), the metal chelating compound aluminum trisacetylacetonate, and the multidentate ligand

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acetylacetone. Table 1 at page 3, compound (III-3); page 18, compound (VI-3); and paragraph 0124. Compound (VI-3) comprises a hydroxyl ethyl group and a triphenylamine group that meet the compositional limitations of formula (3) and formula (4), respectively, recited in instant claims 2 and 5 and claim 3.

Compound (III-3) is $(\text{MeO})_2\text{MeSi}-(\text{CH}_2)_6-\text{MeSi}(\text{OMe})_2$, where Me represents methyl group and the group $\text{MeO}-$ is the hydrolytic group. Compound (III-3) meets the compositional limitations of formula (1) recited in instant claims 1, 2, 5, and 13-15.

Aluminum trisacetylacetonate and acetylacetone meet the metal chelating compound limitation and formula (37), respectively, recited in instant claims 7 and 9, respectively. The hydrolytic group $\text{MeO}-$ in compound (III-3) reacts with the hydroxyl group in compound (VI-3) to form the linkage $-\text{Si}-\text{O}-(\text{CH}_2)_2\text{-triarylamine}$ moiety of compound (VI-3). The resulting siloxane resin comprises units of $-(\text{Me})\text{Si}-(\text{CH}_2)_6-(\text{Me})\text{Si}-$, which meet the compositional limitations of formula (1) recited instant claims 1, 2, 5, and 13-15, and units of $-\text{Si}-\text{O}-(\text{CH}_2)_2\text{-triarylamine}$ moiety of compound (VI-3), which meet the compositional limitations of formula (2), recited in instant claim 1. Thus, the resulting siloxane meets the compositional limitations recited in instant claims 1-3, 13, and 14. The method of making

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said uppermost layer disclosed by Yamada meets the steps recited in instant claims 5-10 and 15.

Yamada further discloses that the electrophotographic photoreceptor discussed above may be used as the photoreceptor in an image forming apparatus comprising a photoreceptor 1, a charging unit 2, an exposing unit 3, a developing unit 4, and a transfer device 5. Fig. 2, and paragraphs 0101-0105. Yamada also discloses that the photoreceptor may be used as the photoreceptor in a process cartridge comprising a photoreceptor 1 and a charging device 2. Paragraph 0114. Thus, Yamada's imaging forming apparatus and process cartridge both meet the apparatus components recited in instant claims 11 and 12, respectively.

Applicants' arguments filed on Jan. 21, 2005, have been fully considered but they are not persuasive.

Applicants assert that Yamada is not prior art because they have perfected their claim to foreign priority by filing a verified English language translation of the priority document.

However, there is no record in the instant application of such a filing. Accordingly, the rejection stands.

9. Claims 1-3, 5, 6, 11, and 12 are rejected under 35

U.S.C. 102(b) as being anticipated by Japanese Patent 2001-

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100447 (JP'447), as evidenced by applicants' admission at page 52, line 8, of the instant specification, identifying dibutyltin diacetate as a metal chelating compound. See the THOMAS machine-assisted translation of JP'447 for cites.

JP'447 discloses an electrophotographic photoreceptor comprising a conductive support, a charge generation layer, a charge transport layer, and an uppermost layer comprising a siloxane resin that meets the compositional limitations recited in instant claims 1-3. Translation, example 1 in paragraphs 0117-0120. The uppermost layer is obtained by forming a coating solution and coating the charge transport layer with the coating solution. The coating solution comprises methyltrimethoxysilane, compound (T-1), compound (Si-1), and "dibutyltin acetate [sic: dibutyltin diacetate]."

Paragraph 0039, compound (Si-1); paragraph 0041, compound (T-1); and paragraph 0120. Compound (T-1) comprises a hydroxyl methyl group and a triphenylamine group. Compound (T-1) meets the compositional limitations of formula (3) and formula (4), respectively, recited in instant claims 2 and 5 and claim 3. Compound (Si-1) comprises a triphenylamine group comprising two $-\text{CH}_2\text{CH}_2\text{Si}(\text{OC}_2\text{H}_5)_3$ groups para-substituted on two of the phenyl groups, where the ethoxy groups are the hydrolytic groups. Compound (Si-1) meets the compositional limitations of

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formula (1) recited in instant claims 1, 2, and 5, when the Y group in formula (1) is represented by the divalent group $-\text{CH}_2\text{CH}_2\text{-phenylene-N(phenyl)-phenylene-CH}_2\text{CH}_2-$ shown in compound Si-1. The instant specification at page 52, line 8, identifies dibutyltin diacetate as a metal chelating compound. Thus, dibutyltin diacetate meets the metal chelating compound limitation recited in instant claim 6. The hydrolytic methoxy groups in methyltrimethoxysilane and the hydrolytic ethoxy groups in compound (Si-1) may react with the hydroxyl group in compound (T-1) to form the linkage $-\text{Si-O-CH}_2\text{-triphenylamine}$ moiety of compound (T-1). The resulting siloxane resin comprises units of compound (Si-1), which meet the compositional limitations of formula (1) recited in instant claims 1, 2, and 5, and units of $-\text{Si-O-CH}_2\text{-triphenylamine}$ moiety of compound (T-1), which meet the compositional limitations of formula (2), recited in instant claim 1. Thus, the resulting siloxane meets the compositional limitations recited in instant claims 1-3. The method of making said uppermost layer disclosed by JP'447 meets the steps recited in instant claims 5 and 6.

JP'447 further discloses that the electrophotographic photoreceptor discussed above may be used as the photoreceptor in an image forming apparatus comprising a photoreceptor 10, a charging unit 12, an exposing unit 11, a developing unit 14, and

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a transfer device 19. JP'447, Fig. 1; and translation, paragraphs 0101-0107. JP'447 also discloses that the photoreceptor may be used as the photoreceptor in a process cartridge comprising a photoreceptor, a charging device, and a cleaning unit. Paragraph 0111. Thus, JP'447's imaging forming apparatus and process cartridge both meet the apparatus components recited in instant claims 11 and 12, respectively.

10. Claims 1-3, 5-7, 11, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by JP'447. See the THOMAS machine-assisted translation of JP'447 for cites.

JP'447 discloses an electrophotographic photoreceptor comprising a conductive support, a charge generation layer, a charge transport layer, and an uppermost layer comprising a siloxane resin that meets the compositional limitations recited in instant claims 1-3. Translation, example 8 in paragraph 0132. The uppermost layer is obtained by forming a coating solution and coating the charge transport layer with the coating solution. The coating solution comprises gamma-glycidoxy propyl trimethoxysilane, gamma-methacryloxy propyl trimethoxysilane, compound (T-1), compound (Si-1), and aluminum trisacetylacetonate. Paragraph 0039, compound (Si-1); paragraph 0041, compound (T-1); and paragraph 0132.

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Compound (T-1) comprises a hydroxyl methyl group and a triphenylamine group. Compound (T-1) meets the compositional limitations of formula (3) and formula (4), respectively, recited in instant claims 2 and 5 and claim 3. Compound (Si-1) comprises a triphenylamine group comprising two $-\text{CH}_2\text{CH}_2\text{Si}(\text{OC}_2\text{H}_5)_3$ groups para-substituted on two of the phenyl groups, where the ethoxy groups are the hydrolytic groups. Compound (Si-1) meets the compositional limitations of formula (1) recited in instant claims 1, 2, and 5, when the Y group in formula (1) is represented by the divalent group $-\text{CH}_2\text{CH}_2\text{-phenylene-N(phenyl)-phenylene-CH}_2\text{CH}_2\text{-}$ shown in compound Si-1. Aluminum trisacetylacetonate meets the metal chelating compound recited in instant claim 7. The hydrolytic methoxy groups in gamma-glycidoxy propyl trimethoxysilane and gamma-methacryloxy propyl trimethoxysilane and the hydrolytic ethoxy groups in compound (Si-1) may react with the hydroxyl group in compound (T-1) to form the linkage $-\text{Si-O-CH}_2\text{-triphenylamine}$ moiety of compound (T-). The resulting siloxane resin comprises units of compound (Si-1), which meet the compositional limitations of formula (1) recited in instant claims 1, 2, and 5, and units of $-\text{Si-O-CH}_2\text{-triphenylamine}$ moiety of compound (T-1), which meet the compositional limitations of formula (2), recited in instant claim 1. Thus, the resulting siloxane meets the compositional

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limitations recited in instant claims 1-3. The method of making said uppermost layer disclosed by JP'447 meets the steps recited in instant claims 5-7.

JP'447 further discloses that the electrophotographic photoreceptor discussed above may be used as the photoreceptor in an image forming apparatus and in a process cartridge, as recited in instant claims 11 and 12. The discussion of the JP'447 apparatus and process cartridge described in paragraph 9 above is incorporated herein by reference.

11. Applicants' arguments filed on Jan. 21, 2005, regarding the rejections over JP'447 set forth in paragraphs 9 and 10 above have been fully considered but they are not persuasive.

Applicants assert that JP'447 teaches a compound having oxygen at a position corresponding to the group Y in general formula (1) as recited in instant claims 1, 2, and 5.

Applicants assert that the JP'447 compound has the structure -Si-O-Si-. Applicants assert that JP'447 does not teach a compound where Y is "a divalent group containing at least one carbon atom in its main chain" as recited in instant claims 1, 2, and 5.

However, as discussed in paragraphs 9 and 10 above, the JP'447 compound Si-1 meets the compositional limitations of

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formula (1) recited in instant claims 1, 2, and 5, when the Y group in formula (1) is represented by the divalent group $-\text{CH}_2\text{CH}_2\text{-phenylene-N(phenyl)-phenylene-CH}_2\text{CH}_2\text{-}$ shown in compound Si-1. The JP'447 divalent group has "at least one carbon atom in its main chain." The resulting JP'447 siloxane resin obtained from the JP'447 compound Si-1 comprises units of compound (Si-1), which meet the compositional limitations of formula (1) recited in instant claims 1, 2, and 5. Accordingly, the rejections over JP'447 stand.

12. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (703) 872-9306.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD

Apr. 21, 2005


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1700